DOCUMENT RESUME

ED 265 305 CE 043 231

AUTHOR Marsh, D. T.
TITLE Vocational Training in the USSR. Coombe Lodge Working Paper. Information Bank Number 2023.
INSTITUTION Further Education Staff Coll., Blagdon (England).
PUB DATE Dec 84
NOTE 36p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Delivery Systems; Educational Legislation; Educational Needs; *Educational Objectives; Educational Philosophy; Educational Policy; Educational Practices; Educational Trends; Enrollment; *Foreign Countries; Political Power; Politics of Education; Postsecondary Education; *Program Administration; *Program Content; Program Effectiveness; Secondary Education; Technical Education; Trend Analysis; *Vocational Education
IDENTIFIERS *USSR

ABSTRACT

In the Union of Soviet Socialist Republics (USSR), vocational education is designed to assist in the achievement of political, economic, and social aims. The emphasis that the USSR constitution places on "socially useful work" and its results has been consistently reflected in legislation governing vocational training since 1919. Not only does vocational training have a higher status within central planning institutions than it does in the West, but 50 percent of the elementary-secondary curriculum is devoted to achieving objectives within the affective domain intended to implant appropriate work attitudes in young people. Therefore, vocational education in the country is administered by a strong central organization with a descending system of hierarchies from national to local levels in policymaking, administration, and the regulation of the training system. Several institutes are involved in research on vocational training and methods of providing it. The USSR has 7,626 vocational schools with 3.8 million students being trained in 1,500 different trades, some 2 million skilled and semiskilled workers graduating each year. The system employs 340,000 teachers who receive pre- and inservice training; the directors and senior staff must take refresher courses every 5 years. (Appended to this report are the USSR general and vocational training reforms that were passed in April 1984). (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

P Rawlings

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

This paper is provided for the purposes of discussion and study. The views and policies contained in it are not necessarily those of the Further Education Staff College.

Further copies of permission to reproduce this paper may be obtained from:
The Librarian, Further Education Staff College, Coombe Lodge, Blagdon, Bristol BS18 6RG Tel: 0761-62503

© The Further Education Staff College, 1984

CONTENTS

1. Foreword

2. Introduction

3. Constitutional and Conceptual Frameworks of Vocational Training

4. The Central Administration of Vocational Training and Education: Organisations and Institutions

5. The Vocational Technical Schools

6. Analysis and Evaluation

Bibliography

Appendix 1: General Education and Vocational Training Reforms in 1984

Appendix 2: Itinerary and General Comments

* * * * * *

VOCATIONAL TRAINING IN THE USSR

FOREWORD

This is a Report of a visit undertaken to the USSR during April, 1984, through the aegis of the British Council under Article VI(8) of the Cultural Agreement with the USSR for 1983-1985. It attempts to:-

(a) describe the provisions for vocational training in the USSR,

(b) explore how they are reflected in the work of the institutions visited,and,

(c) evaluate the effectiveness of the system.

However, at the outset there are four major factors which have to be considered: first, the size and nature of the geography of the USSR; secondly, "democratic centralism" and the duality of the Communist Party of the Soviet Union (CPSU) and state in its government; thirdly, the values of communist theory and practice; finally, concepts of education and learning.

I INTRODUCTION

1. The USSR encompasses a vast area of land: it is 22 million square kilometres in area, stretching 12,000 kms from west to east, and 4,000 kms from north to south. The population is approximately 271 million. Speaking 70 different languages, the people of the USSR live in 15 Union Republics, 20 Autonomous Republics, 8 Autonomous Regions, and 10 Autonomous Areas. It is therefore a complex and varied country with problems of integration and communication. Densely populated urban and industrial areas lie within thinly populated countryside, which ranges in kind from the fertile black soils of the west, to fertile valleys in the south and arctic and desert regions. National languages, traditions and customs are avidly retained, but the most powerful influences are those of Russia, Ukraine, and Byelorussia, accounting for some 200 million people. The problem of administrating such diversity is partially solved by a centralised bureaucracy to provide a uniform, and controlled, system.

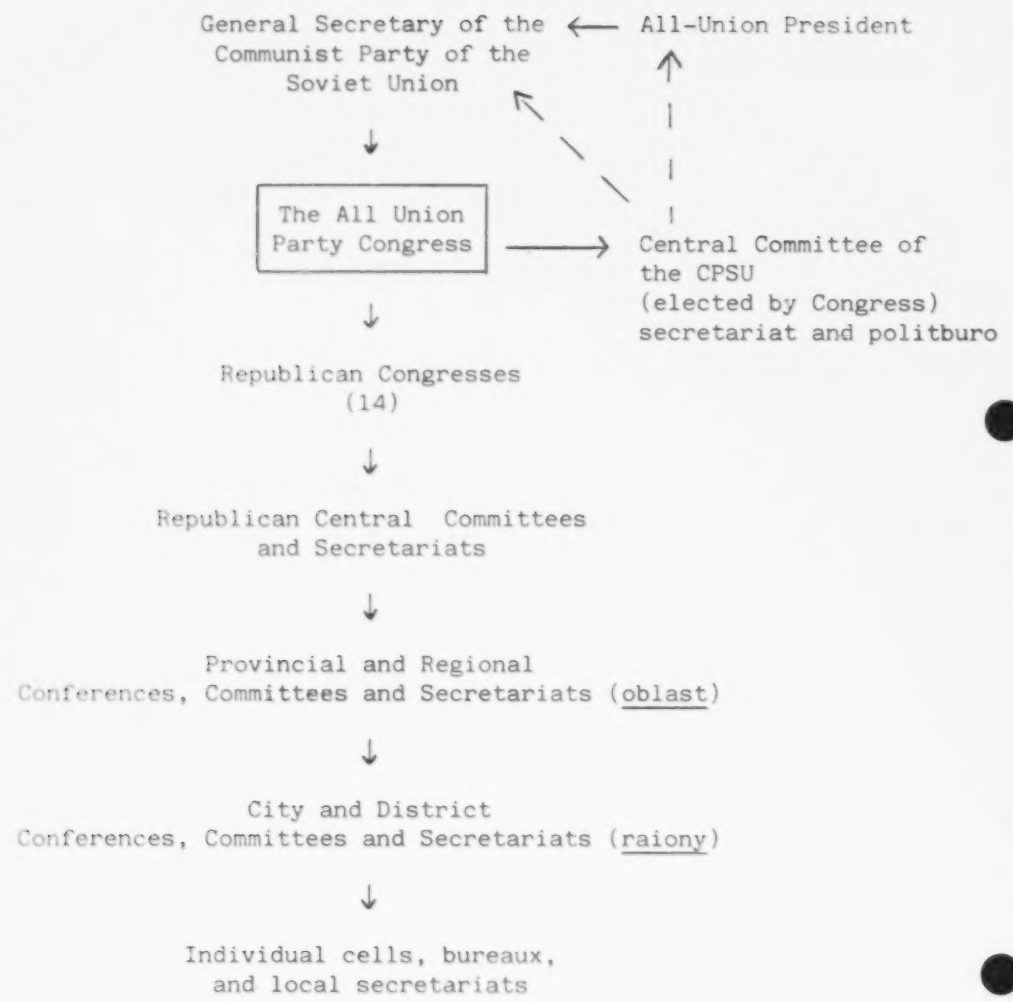
2. Lenin's principle of "democratic centralism" places policy-making for the nation in the hands of the leaders of the proletariat. In reality leadership lies within the policy-making element of the CPSU, the Central Committee of the CPSU and the politburo. Hence, there is a duality within the governance of the USSR between, on the one hand, the CPSU with its organisational structures (see Figure 1), and on the other, the State with its structures (see Figure 2). The two systems meet at the top in the sense that the CPSU determines all policy, and the State administers it.

3. The over-riding values and moral codes of the USSR are those expressed in Marxist-Leninist principles. Within this framework, education is seen to play a vital role with explicit tasks to perform in the development of effective workers and citizens of the USSR, evidenced clearly in the policies and processes of vocational training.

4./

FIGURE 1

The Communist Party Organisation


General Secretary of the Communist Party of the Soviet Union
All-Union President
The All Union Party Congress
Central Committee of the CPSU (elected by Congress) secretariat and politburo
Republican Congresses (14)
Republican Central Committees and Secretariats
Provincial and Regional Conferences, Committees and Secretariats (oblast)
City and District Conferences, Committees and Secretariats (raiony)
Individual cells, bureaux, and local secretariats

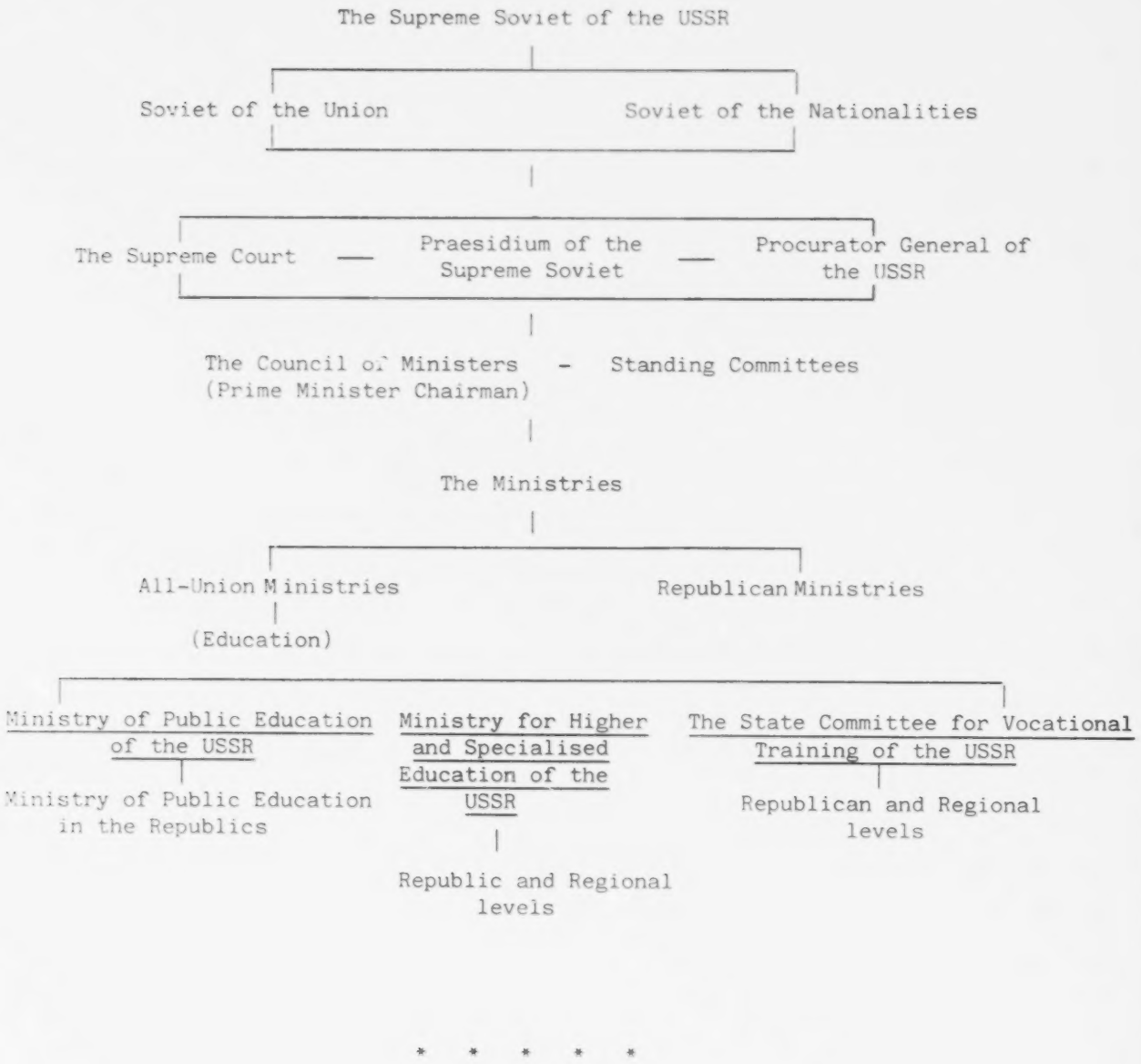
18 million members

200,000 full-time paid officials (apparatchiks)

* * * * *

FIGURE 2

The State Government and Education


The Supreme Soviet of the USSR
Soviet of the Union
Soviet of the Nationalities
The Supreme Court
Praesidium of the Supreme Soviet
Procurator General of the USSR
The Council of Ministers (Prime Minister Chairman)
Standing Committees
The Ministries
All-Union Ministries
Republican Ministries
(Education)
Ministry of Public Education of the USSR
Ministry for Higher and Specialised Education of the USSR
The State Committee for Vocational Training of the USSR
Ministry of Public Education in the Republics
Republic and Regional levels
Republican and Regional levels

* * * * *

4. The USSR has hence developed an individualistic approach not only to the role of education, but to forming the educational theories (and their resulting practices in the classroom).

5. These factors must be explained before examining the central, organisational structures of vocational training.

II CONSTITUTIONAL AND CONCEPTUAL FRAMEWORKS OF VOCATIONAL TRAINING

6. Vocational training is designed to assist the achievement of political, economic, and social aims. The Constitution of the Union of Soviet Republics states three aims of the Soviet state:-

(a) "to lay the material and technical foundations of communism",

(b) "to perfect socialist social relations and transform them into communist relations", and

(c) "to mould the citizens of a communist society".

7. "Socially useful" work and its results must determine a person's status in society achieved by combining material and moral incentives, and encouraging innovative and creative attitudes towards work, (Article 14, The Constitution of the Union of Soviet Republics). Differences of class, of rural and urban areas, and of mental and physical work must be eliminated. Hence, free education and vocational training is available for all citizens to serve communist education and the intellectual and physical development of youth, who must be trained for work and social activity (Article 25). Such education is both moral and aesthetic (Article 27). Article 40 guarantees employment for pay in accordance with the quantity and quality of work, and the right to chose a trade or profession in accordance with the individual's inclinations, abilities, training, and education, "with due account to the needs of society". Whilst Article 45 provides the right to such free education, Article 59 obliges all citizens to comply with socialist conduct. Article 67 also obliges all citizens to concern themselves with the upbringing of children, to train them for socially useful work, and to raise them as worthy members of the socialist society.

8. These fundamental laws of the State have been reflected consistently in the development of vocational training since 1919, when Lenin instituted compulsory vocational training for certain trades and crafts and established a Chief Committee for Vocational Training to manage, co-ordinate, and control at central government level the work of various departments to provide skilled workers for the economy. Basically, the same structure remains today. Factory apprentice schools existed for nearly 30 years until it became obvious that the system had to change: there was no uniformity in training across the USSR; it was subordinated to the needs of individual factories; not enough skilled workers were being provided for a growing industrial-based economy; and that, finally, vocational training was too narrow, lacking the essential broad base provided by an extensive general education. (These criticisms are still being voiced.) The Decree on State Labour Reserves of 1940 provided for the three basic types of vocational training schools (which have developed into the existing system) working in three main groups of skills: for the heavy, basic industries, the/

the railways, and all basic craft skills. In 1958 ties between school and working life were strengthened and the system of public education developed. Vocational schools were re-organised to enable transfer from the eight-year general education school into trade training courses varying in length between 1 and 3 years. Further development occurred in 1968 to improve training in trades which were requiring a broader educational base than hitherto; post-school courses were extended by a year and contained a larger element of general education. In 1977, when compulsory ten-year schooling was introduced, "guidelines" were issued to improve vocational effectiveness (i.e. achieving tasks set by the State), to improve instructional quality, and to unite more closely the processes of trade and general instruction. These changes were made because "vocational training helps to increase the influence of the working classes in the development of society and cements the social basis for the unity of all classes and groups" (CPSU, On the Sixtieth Anniversary of the Foundation of the USSR). In 1981, at the 26th Congress of the CPSU guidelines for the period to 1990 were issued along the same lines, but emphasising the role of the Specialised Vocational School (the SPTU, Srednie Professionalno Technicheskoe Uchilishche) as the major source of skilled workers for the economy. In April, 1984 changes to the whole system of public education were announced (see Appendix 1). They coincide with the next Five Year Plan for the USSR. (Educational planning is dependent upon the development of the national economy as set out by the State Planning Commission of the USSR /Gosplan/ which, inter alia, determines the quota of the different kinds of professional and vocational training provided in the USSR. Gosplan can be as specific as stating the allocation /bronya/ of students to be admitted each year into the SPTUs and the various trades.)

The Educational Process

9. Given the constitutional framework, centralism, and education's role of political socialisation, it is not surprising to find three fundamental differences with western cultures in the conceptual frameworks which generate educational processes.

10. First, the importance placed on socially useful work not only gives vocational training higher status within central planning institutions, but determines that 50% of the curriculum is devoted to achieving objectives within the affective domain intended to implant appropriate attitudes towards work in young people. Linking school education with the realities, duties, and obligations of work has led to a steady development over the years of the subject of "labour training" (trudovoe vospitanie), linking theory and practice by placing theory in the classroom, and practice (i.e. the practical applications of that theory) in special training workshops (uchebnoe proizvodstvennye kabinety, or UPKs) in state "enterprises" to which all schools are linked. From Grades 1 to 10 in secondary schools there is a steady increase in the amount of time spent each week by pupils in the UPKs.

11. An essential part of developing appropriate attitudes is the systematic provision of vocational guidance by the Labour Commission (Kommissiya Po Trudovoe, or KPT). Guidance is part orientation towards work and possible careers, part informing on employment vacancies, and part propaganda in directing young people towards trades and professions which the State Plan needs/

needs to develop. Open days in factories and schools, or "profession days" (dni professii) introduce young people to "labour socialisation" as part of the development of the Soviet outlook on life or mirovozzrenie.

12. In SPTUs, in which a three-year course will total some 5,000 hours, more than 2,400 hours are devoted to academic subjects and to social studies (obschchestvovedenie), a course of study of Marxist-Leninist theories. It is stated officially that communist ethics "define(s) the context of educational work at the vocational schools". Throughout the educational system these two strands of education (obrazovanie) and "moral up-bringing" (vospitanie) (or the character training embracing moral, social, cultural, and political aspects of life) co-exist at all levels.

13. Secondly, the teaching-learning process is seen differently than in the west. Russian has one word, ochubenie, meaning both "teaching" and "learning"; the distinction western educators would make is therefore not understood. Soviet psychology maintains that young people can only learn, and hence develop, within the context of structured intervention by adults. Three factors determine development: heredity, the environment, and social interaction. Hence the environment of the school is seen as compensatory and deliberately constructed to instill communist etiquette and conduct (povedenie) as well as vospitanie. The qualitative difference between man and animals is that labour and the ability to handle tools changes man's behaviour. Vygotsky, the founder of Soviet psychology, says that animals operate primarily by conditioned reflexes and experience once only, as it were, whereas man individually transmits historical experience of society through speech and the mutual interaction of the child and the adult. Hence, in vocational guidance, for example, aptitudes and capabilities are physiological and biological factors of the individual (sposobnosti). These can be measured, and a "psychodiagnosis" of the individual made. Any other type of individual difference can be over-ridden by teaching. The role of the adult as teacher is not to fulfil potential, but to develop within the child the mental activities and abilities it needs to cope with the world. Concepts are largely acquired through teaching. Failure to learn is due to mental and physical abnormalities, dealt with by the study and practice of "defectology" (defektologiya), or, simply due to anti-social elements within the individual who does not wish to conform to socialist norms.

14. In the classroom these concepts are manifest in the step-by-step instruction, frequent testing (usually objective), rote learning, repetitive processes, a mechanical reliance on audio-visual aids, and the practice that innovative methods of teaching can only be introduced after rigorous research which proves their effectiveness. Classes are formal and teachers are sceptical about the effectiveness of distance-learning (unless accompanied by intense residential instruction), flexi-study, self-development, or any other sutdent-centred approach.

15. The third important factor to consider in the educational process is the significance of the state youth organisations, which are seen as an adjunct to the state educational system in the moral up-bringing of the 6 to 25 age group. Between 7 and 10 years of age all children join the Octobrist Movement (Oktyabryata), joining the young Pioneer Movement at 14 (Pionery), and at 17 the 42 million-strong All-Union Young Communist League/

League (Kommunisticheskii Soyuz Molodyozhi or Komsomol for short). These organisations, together with the Red Scouts (Krasnye Sledopyty), the Eaglets (Orgyonok), Summer Lightning (Zarnitsa) and the GTO (Gotov Trudi Oborone) (primarily pre-military service orientation), are powerful influences in the training of young people. They provide extra-curricular activities, summer camps, work camps, and other socially useful activities at local, regional, and national levels. The Pionery and Komsomol in particular play major educational roles. Apart from the indirect (and direct) political teaching which occurs, they mobilise students for disciplinary and socio-moral purposes (as prefects, Dezhurnye), provide hobby circles (kruzhki), the important self-management (samoupravlenia) of classes and institutions, and a range of voluntary extra classes. Good reports, kharakteristika, from such organisations often determine a student's entry into higher education. Komsomol also provides one route of student access to and participation in decision making within educational institutions, from day-to-day matters to teacher evaluation and policy-making.

III THE CENTRAL ADMINISTRATION OF VOCATIONAL TRAINING AND EDUCATION: ORGANISATIONS AND INSTITUTIONS

16. The democratic centralism of the Soviet State creates a powerful central bureaucracy with a descending system of hierarchies from State to local levels in policy-making, administration, and the regulation of the training system.

The General Education System

17. Public education in the USSR comprises three separate elements, headed by two Ministries (for Public Education in the USSR, for Higher and Specialised Secondary Education in the USSR), and the State Committee for Vocational Training in the USSR. (See Figure 3)

The Ministry of Public Education of the USSR

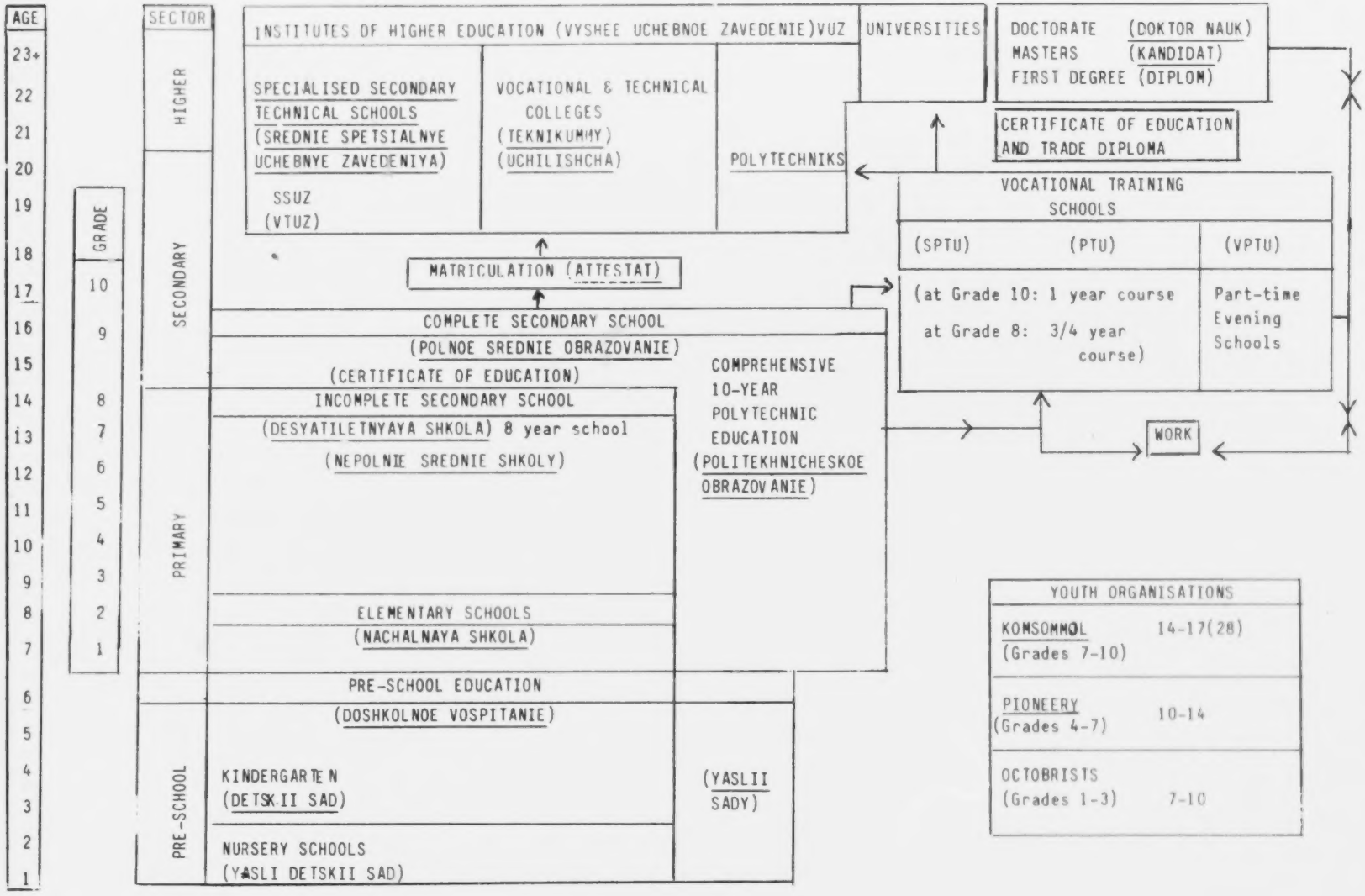
18. This Ministry is responsible for compulsory general education schools at primary and secondary levels together with pre-school establishments.

19. Pre-School Education. Pre-school education (doshkolnoe vospitanie) starts as early as six months of age with creches (yaslie) for working mothers, and nursery schools (yasli detskii sad) to the age of three, followed until seven by kindergarten (detskii sad). (Sometimes these two stages are combined into one institution, yaslii detskii sad.) Pre-school teachers are trained at pedagogical colleges (pedagogicheskoe uchilishcha) or the Institute for Pre-School Education. There is no formal teaching of skills of literacy or numeracy, though older children are prepared by means of language and number games to develop their conceptual and oral skills. They are introduced to "self-management" and to "socially useful work". This stage is neither compulsory, nor necessarily universally available, but does reach the majority of the older age group, particularly in urban areas. (From 1984/85 children will start primary compulsory education at six years of age.)

20./

FIGURE 3

THE EDUCATIONAL SYSTEM OF THE USSR



I.B.N. 2023

20. Secondary Education. Compulsory education lasts for a minimum of 8 years. Grades 1 and 2 comprise the elementary schooling cycle (nachalnaya shkola). Grades 3 through 8 schools are so-called "incomplete secondary schools" (vosmiletnie shkoly), whereas schools containing Grades 3 through 10 are "complete secondary" schools (desyatiletnyaya shkola) providing complete secondary education (Polnoe Srednie Obrazovanie). These latter schools generally provide a 10-year cycle of "polytechnic education" (politekhnicheskoe obrazovanie) leading to matriculation, the "attestation of maturity" certificate (Atestat Zrelosti) taken at 17/18 which can lead to higher, technical, or vocational training and education. Children thus have the option to leave school at the end of Grade 8 or Grade 10, depending upon which further educational pattern they wish to follow, or to take low-grade employment as unskilled workers. Entrance to higher education is by competitive examination (konkursnye ekzamminy). There are also schools for working and rural youth (shkola rabochei molodiozhi), and for gifted children in special subjects (science, maths, ballet, etc.) Teachers for Grades 1 through 3 are trained at pedagogichesky uchilishcha (PUs), while those for Grades 4 to 10 (the specialist subject teachers) are trained at higher education institutes (instituty) or in universities. In-service training is common and conducted at Instituty Usovershenstvovaniya Uchitelei (IUUs).

21. The Ministry for Higher and Specialised Secondary Education in the USSR. It controls all tertiary-level higher education and specialised institutions. These Institutes of Higher Education (Vyshee Uchebnoe Zavedenie), the VUZs, include Universitety whose degrees are awarded by the Higher Degree Commission (Vystaya Attestatsionnaya Kommissiya, the VAK). Degrees are the Diplom, Aspiranty (Master's) and Doktoranty (Doctorate). Other higher education institutes include the SSUZys - secondary specialised education institutitions (Srednie Spetsilnoe Uchebnoe Zavedenie) which train to non-degree level semi-professional vocations, the polytechnics (polytekhnicheskoe)which are either monotechnic concentrating on particular fields of technology, medicine, teacher training, etc., or broad based institutions, together with Uchilishcha and Teknikum, both specialising in some area. There are also VTUZs (Vyshee Technicheskhoe Uchebnoe Zavedenie) which are specialised technical institutes attached to a particular industry (e.g. the Likhachev Automobile Plant in Moscow has a VTUZ). Broadly, the Universities concentrate on the pure sciences and arts degrees while the SSUZy, PUs, technikummy and Uchilishcha provide diplom qualified professional and technical workers, like doctors, engineers, teachers, etc.

The State Committee of the USSR for Vocational Training

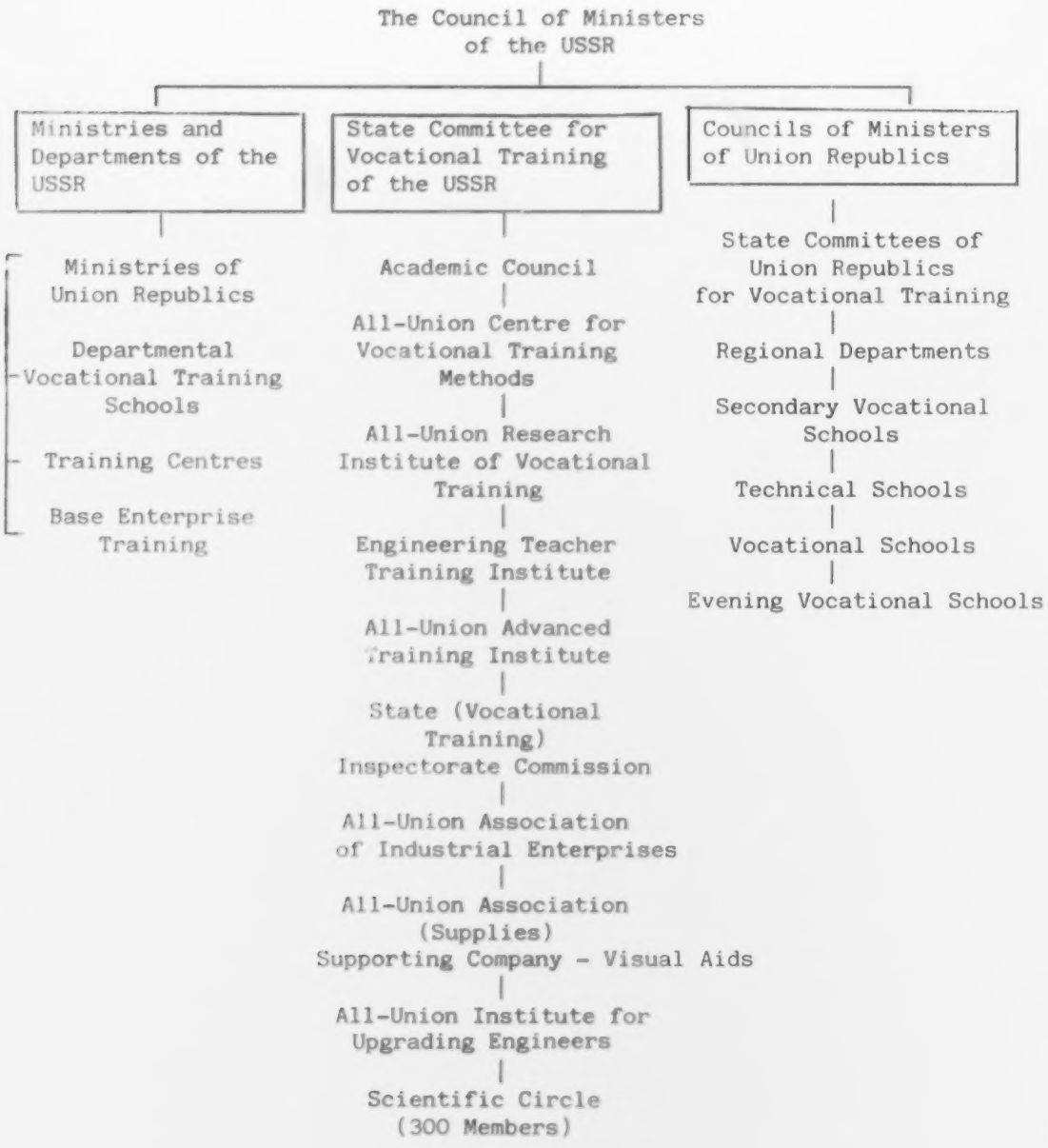
22. The Committee is responsible for all technical vocational schools and associated institutions in the USSR, working through the relevant Committees for Vocational Training in the Union Republics. It has equal governmental status as the two Ministries, responsible to the Council of Ministers to the USSR.

23. The broad tasks of the Committee are to conduct uniform policy for vocational training throughout the country, produce lists of trades in which workers are to be trained, ensure the development and elaboration of curricular and methods, write text books, to research into problems bearing on vocational training, organise training and re-training of master craftsmen, instructors, and teachers, and supervise the work of the various organisations in charge of vocational schools. It is a complex organisation to which are attached a number of institutions (see Figure 4).

24./

FIGURE 4

The State Committee (of the USSR) for Vocational Training


The Council of Ministers of the USSR
Ministries and Departments of the USSR
State Committee for Vocational Training of the USSR
Councils of Ministers of Union Republics
Ministries of Union Republics
Departmental Vocational Training Schools
Training Centres
Base Enterprise Training
Academic Council
All-Union Centre for Vocational Training Methods
All-Union Research Institute of Vocational Training
Engineering Teacher Training Institute
All-Union Advanced Training Institute
State (Vocational Training) Inspectorate Commission
All-Union Association of Industrial Enterprises
All-Union Association (Supplies) Supporting Company - Visual Aids
All-Union Institute for Upgrading Engineers
Scientific Circle (300 Members)
State Committees of Union Republics for Vocational Training
Regional Departments
Secondary Vocational Schools
Technical Schools
Vocational Schools
Evening Vocational Schools

24. The present system of vocational training is carried out in four types of institutions:-

(a) Secondary special vocational schools (Srednie Proffessionalno Technicheskoe Uchilishche (SPTUs) which admit students who have completed Grade 8 general education to undertake a three-year course for trade training diplomas and general education to the level of attestat zrelosti. (SPTUs also take students who leave school after Grade 10, for whom there is a one-year course leading to a trade diploma.)

(b) Technical Schools (Technikcheskoe Uchilishcha (TUs) which offer a one-year course for Grade 10 leavers leading to a trade diploma.

(c) The PTU which admits Grade 8 leavers and offering one- or two-year courses in trade training without general education (students find employment and complete their general education in part-time evening schools).

(d) Part-time evening technical schools, Vyshernye Professionalno Technicheskoe Uchilishcha (VPTUs) where students while working can qualify for a trade diploma.

25. There are 7,626 vocational scholls with 3.8 million students being trained in 1,500 different trades, producing each year some 2 million skilled and semi-skilled workers. During 1981-85 the Five Year Plan called for 13 million graduates of the PTUs and had reached, by 1984, 7.3 million. There are also 2,128 agricultural PTUs with 1 million students, annually providing 680,000 skilled and semi-skilled agricultural workers, engineers, and specialists. The system employs 340,000 teachers and instructors who are trained (initially and in-service) in 74 different technikummy and departments in 36 VUZ. Every five years engineers take a refresher or up-grading course at the All-Union Institute for Advanced Training of Vocational Teachers.

The Organisation of the State Committee for Vocational Training in the USSR.

26. The Committee, based in Moscow, is composed of six Departments (or Branches) run by Deputy Chairmen of the Committee which can handle training methods, general education, moral and political education (vospitanie), textbooks, liaison with Republic Committees, and an economics branch dealing with the State enterprises. A 15 member Board of Directors determines policy (polozhenie) to meet the targets set by the CPSU Congress and the Central Manpower Planning Board of the USSR.

27. The principal task of the Committee is to develop and manage the training system for the manpower required as the Soviet economy develops. It is therefore concerned with manpower prognosis and planning, maintaining liaison at all levels between vocational schools and their base enterprises, financing the sytem, teacher training and staff development, inspection to maintain quality, drafting regulations, administering them, providing materials, developing curricular and syllabii, and deciding upon the structure of the various trades recognised as requiring qualification.

28. At present there are some 1,500 trades, divided into 14 categories related to the various "branches" of the economy; for example, General Engineering (42 trades), Electrical Industries, Construction (45 trades), Transport, Textiles,Light Engineering, Food, General Services, Agriculture, and/

and Natural Resources (mining, oil, water, forestry, etc.). A current problem facing the Committee is to meet impending technological change by providing new trade structures, especially computer operating and maintenance, automation skills, electrotechnician microchip assembly, and computerisation in agriculture. This task involves designing a syllabus, providing a detailed curriculum, writing materials for teaching, and providing text books and audio visual aids.

29. The Committee is also concerned with responding to the changes announced by the Supreme Soviet in April, 1984. The biggest challenge is seen to provide an effective vocational guidance system for which, at present, there is no real framework. At the same time the Committee has to raise the status of the SPTU to attract more students, and more able students, than the old PTUs which were seen to be too job-oriented and not the best route for any social mobility.

30. To assist the Committee there are three significant institutions: the All-Union Scientific Centre for Methods of Vocational Technical Training, the All-Union Correspondence Pedagogical Institute, both at Moscow, and the All-Union Research Institute of Vocational Technical Training in Leningrad.

The All-Union Scientific Centre for Methods of Vocational Technical Training.

31. The Centre was established in 1977 from the former Methodological Centre for Vocational Training. It expanded its activities into research and works with the National Committee for Labour Affairs to produce lists of trades and associated jobs, prepare job descriptions, develop the relevant curricular, and prepare textbooks and audio-visual aids.

32. It has five main functions:-

(a) To work out the content of trade training and vospitanie. Two main documents are produced by the Centre which govern the whole programme of vocational training across the USSR: the curriculum (uchebny plan) and the syllabus (uchebny program). The curriculum lists the subjects to be taught and then allocates the number of teaching hours to each subject; the syllabus details the contents of each subject and the step-by-step sequencing of each topic within a subject.

(b) To study and "assimilate advanced awareness" of training processes and systems and to introduce effectively new technologies into training.

(c) To decide the methods to be used for each subject and topic in the classroom, and, to assess, accept (or reject) and introduce new lesson plans and methods.

(d) To provide staff development for skilled workers employed in vocational training.

(e) To develop new methods of intensifying skills training. At present, three ideas are being explored. First, that the curriculum and syllabus can be unified so that, for example, in Construction trades some 20 different documents existing/

existing at present can be replaced by a single document in two parts. The first contains a set of "core skills", the second contains listed special skills additional to the core skills. The second idea is to provide a document on teaching methods for every trade which will also contain all the necessary "norms" - for equipment in workshops, classrooms, texts, examinations and tests with sample questions (bilets). The third research is concerned with quickening study by assessing what is "core" to any subject and to concentrate upon that for maximum transfer of learning. (This has been tried successfully apparently with typing skills and language acquisition.) The aim is to cut training time by producing a profile of a job in terms of its core skills and to intensify the depth of their study. Most of this research is carried out in a network of experimental schools and by staff who undertake such research as part of their duties.

33. The Centre expressed little interest in the "effectiveness" of their work (that is tested in All-Union Research Institute), but more in the quality of the centralised documentation. The principal argument provided for such centralisation was that the Centre ensured standardised training and awards across the country.

34. The Centre is divided into 14 Divisions, each Division functionally related to a branch of the economy. It is advised by a 27-member Scientific Council of the USSR composed of prominent scientists, practical workers, and leading technical specialists. The Board examines and has to approve all documents before publication and official adoption.

The All-Union Research Institute for Vocational Technical Training

35. Research undertaken by the Institute during the last decade is said to have formed the basis for the current reforms. From a "scientific concept" of educational research (naushnaya conceptia) of systematically examining all the sub-systems of the training process, the Institute was able to ascertain that the combination of trade training and broad education produces a more effective institution, the SPTU, than the original PTUs. Curricular are made effective if they increase theoretical knowledge and avoid over-specialised skills training. Trade training should increase the transferability of skills in an increasingly technological economy and should also act as a route to higher education. The best system is for students to enter at the end of Grade 8 for a three-year course, or for a one-year course at the end of Grade 10. The closer co-operation between schools and industry and the development of the practice of UPKs, give training greater credibility, allow SPTUs to be funded by enterprises (especially efficient in group, co-operative schemes) and enable workers to become more involved with vospitanie.

36. The practical work in the development of curricular and methods involved research in several areas. First, the problems of developing model curricular for future trades (especially for automation and robotics) had to be tackled. Models were produced by advisory groups and tested in schools before being presented for adoption by central authorities such as the State Committee. Secondly, the institute examined how to maximise the efficiency of the system which the State Planning Commission needed to assist manpower planning/

planning. Thirdly, the Institute studied systems abroad, looking in particular at the vocational guidance practices and the policy of flexible training within groups of trades adopted in the German Democratic Republic and Bulgaria.

37. Research for developing courses for new trades is tackled from a different perspective to that in the west: the "man-machine environment". Studying a job and its mental and physical aspects, or professiologiya, involves institutions such as the Institute for Hygiene and Psychology and the Institute for Physical Education collaboratively examining the job, its goals, and the necessary mental and physiological "expenses" occurred in doing that job. It takes between 3 and 5 years to complete the cycle of investigation, modelling, evaluating, and decision. (Existing curricular are reviewed every 4 to 5 years automatically unless there is a call for a change from the economy.)

38. The Institute is also interested in test criteria and assessment methods, both of which seemed to be aimed to limit failure (emphasising testing by results), to measure the quality of the work carried out by students (by both oral and practical tests), and to increase the speed with which trainees can re-train as new jobs and skills are required.

39. The Institute is divided into three Divisions. One deals with the economy and planning of the system (especially its financing). Another is concerned with curricular model and methodological development. The third, which carries out the main work, deals with psychology, physiology, limitations of jobs, and developing tests for assessing job suitability. It has some 350 staff and an annual budget of between 1.5 and 2 million roubles.

The All-union Correspondence Course Industrial Pedagogical Technikum

40. Whereas teachers (uchitel) are trained in teacher training institutions at VUZs, instructors (vospitatel) are trained in pedagogical methods at separate institutions, some 74 technikummy and uchilishche (SSUZy's). They are usually master craftsmen who wish to enter vocational training. Since about 40% of teachers and instructors in the USSR qualify by part-time courses, and given the size of the USSR, correspondence courses are important in the system of initial, refresher, up-grading and in-service training.

41. The ACCIPT is currently training 1,850 students on five-year courses in four occupations, accountancy, metal work, installation and repair of industrial plant, and electrician. It is the only teknikum operating solely by correspondence (of the others, which are all day-course programmes, 40 have correspondence departments). It has a full-time staff of 80 (the establishment for a teknikum of this size would normally be 180) and a budget of 150,000 roubles.

42. All students are graduates of the 10th Grade, of a PTU, have worked for between three and five years, and achieved the status of master worker, and who have been invited to instruct in a PTU or SPTU but require higher technical qualifications. Most will already be working in some capacity in a PTU. They have to pass an entrance examination (sat locally) from which the college chooses its students.

43. The college sends students text books with a course outline. During the first 8 months students must complete 10 "control tests" (metodichka) which are assessed and returned. If successful, they then have to attend a 40-day residential/

residential course at the college during which they attend lectures for 8 hours a day for 6 days a week. In addition to their specialist topics they are given a common core course of maths, science, political economy, and general studies, for which they sit some 7 or 8 examinations. They are then given their projects for the following year, contained in booklets, and allocated individual work at their base enterprises. Support while they study at work includes correspondence with the college Tutor and the facilities in technikummy in 71 cities. They return a year later after further control tests and repeat the process. In the final year the residential course is 100 days, to prepare for diploma examinations in classrooms and workshops. Alternatively, Moscow based students (40% of the total) may attend evening classes twice a week for 4 hours between September and July, sitting their examinations in December and June. During the first 3 years the balance between technical and pedagogical studies is roughly equal. In the last two years the course concentrates on technical content. Residential courses are staggered throughout the year to balance the teaching load of staff and to prevent too many students at any one time being away from work. The average pass grade (on a 1 to 5 scale) is 4.2, with occasional "Red Diplomas" (Krasnye Diplom) or distinctions awarded. Students are aged mainly between 25 and 27. They are granted paid leave to study and awards additional to their wages. The drop-out rate is said to be about 6%.

44. The State Committee for Vocational Training is also represented at Republic and Regional level. The visit included discussions with the Georgian Republic Committee for Vocational Training at Tbilisi and the Leningrad City and Regional Department for Vocational Training.

The Georgian Republic Committee for Vocational Training

45. The Committee is responsible for 167 PTUs, with a student enrolment of 65,000 and a staff of 13,000 teachers and instructors. The budget for 1984-1985 is 200 million roubles which will be increased accordingly as the Republic meets its goal during the next five years of doubling student numbers. The principal problem the Committee will have to face is that of attracting qualified workers to move from enterprises through pedagogical institutes and into the PTUs, particularly for the new industries being developed in the Republic (radio, electronics, and computers). The bulk of students, however, are involved in agriculture, attached either to state or collective farms. Like the State Committee, the Republic Committee has institutions to support its work.

46. The Pedagogical Institute for Vocational Training, Tbilisi.
The Institute is part of the system of SSUZy's, a technikum which trains 600 workers for instructional duties in PTUs in metal crafts, industrial plant maintenance, civil engineering and agricultural trades. In addition to a teaching diploma (pedagogishche diplom) students are also upgraded as craftsmen to Grade 5 or 6 (craftsmen are graded on a scale of 1 to 6) during the three-year course. Practical work is undertaken in appropriate factories attached to the institute and their teaching practices at local (or their own) PTU.

46. Students aged between 19 and 25 come to the Institute either directly from the PTU or as skilled workers with a general education attestat and a trade qualification, on recommendation of their PTUs or enterprises as showing aptitude for and a wish to become an instructor. 95% of the graduates are/

are allocated to PTUs. The remainder go directly to higher education or as foremen in enterprises.

47. The curriculum for one year of the three-year course comprises some 2,700 hours of instruction:

Social sciences	175
General Studies	100
General Technical Studies	575
Specialist Studies	1,550
Teaching methods	100
PE, Psychology, etc.	

However, current changes undertaken include raising the total to more than 3,000 hours to intensify practical technical training, to reach, in science in particular, the level of teaching of the first two years of a degree awarding VUZ, and to add topics such as Marxist-Leninist theory and more advanced physics and maths to increase the status of the vospitatel and to enable them to take on the role of an uchitel.

48. Teaching practice consists of three periods spent at a PTU: the first as job familiarisation, the second in learning skills by observation and practice, and the third (lasting three months) instructing. Practices are assessed by institute staff and by the PTU.

49. The Institute is headed by a Director, with Deputy Directors in charge of Education and Administration. The Education Dviision is split into three groupings - for Academic Subjects, Technical Training, and Vospitanie. It has an academic staff of 50 teachers and 15 instructors.

The Leningrad City and Regional Department of Vocational Training

49. The Department is responsible for 200 vocational schools with 120,000 students within the region which, as one of the most heavily industrialised areas in the USSR, train students in all 14 trade groups. Responding to the needs of the area the Department provides three types of schools, the PTU (of which only 30 remain), the SPTU, and the VPTU for craft upgrading. The Leningrad area can demand higher entry levels than other regions (presumably because of competition).

50. Schools are placed in catchment areas, based on the enterprises in that area. This involves some inconvenience to students who may have to travel across the city, but half of the students live outside the city boundaries in any case. Large enterprises are related in the normal way to schools, but since there are so many smaller enterprises in the city there is a trend towards organising co-operative training groups (komplex) which together work on a contract basis with a school (70% of the SPTUs and PTUs are now co-operatively based). In Leningrad agricultural schools are organised and funded separately.

51. The city attracts large numbers of young people from outlying regions who can enter training in the 300 trades associated with the two largest industries of machinery construction and civil engineering. About 10% of vocational school graduates go directly to higher education, the remainder being allocated to appropriate enterprises within the city and the region.

52./

52. The Regional Board consists of 150 people headed by a Chairman and Deputy Chairman and is structured into four Branch Boards (Otraslevoye Upravleneye): Heavy Industry, Agriculture, Construction, and City Services. Each Branch is headed by a Chairman with 6 Deputies and 13 members, with its own Inspectorate. (They are concerned with checking that training processes follow the regulations, advising on training schemes, and maintaining liaison between base and base co-operative enterprises and the 10/12 schools allocated to them.) There are in addition "Functional Boards" dealing with functions such as the management of schools, finances, supplies, general studies, and vospitanie. Evening courss are linked also with enterprises and to the various branches of the economy but they may produce their own curricular and syllabii to meet their specific needs, which have to be approved by the Department Board. Hence, a new type of training process is being developed in Leningrad which to some extent removes part-time training from the centralised, top-down bureaucratic process. Funds for such courses come from enterprise profits. Special provision made for the handicapped is administered by the Ministry of Public Education and the regions' Social Welfare Committee.

53. Conclusion. Such is the centralised hierarchy of the All-Union organisation of vocational training. Central control undoubtedly achieves a remarkable degree of consistency of provision and standards of qualifications throughout the USSR. Whilst rigid central control can lead to inflexibility and slowness to respond to changing national and local needs, to prescriptive processes checking innovation, and to inefficient demarcation of authority and responsibility, it nevertheless ensures policy, funding, regulation, and an integration of vocational training with the economy as a whole. As a direct, executive arm of political will, the State Committee with its suporting bodies is able to achieve an impact greater than that inany western systems.

V THE VOCATIONAL TECHNICAL SCHOOLS

54. Four schools were visited, one in Moscow, two in Leningrad, and one in Georgia. The following descriptions of the work of these institutions is intended to give a broad view of how they work, conditions of service for teachers, student life, and the content of their programmes.

A General View of an SPTU

55. An SPTU is run by a Director, appointed by the State Committee, together with two Deputies; one in charge of the general and "moral upbringing" (vospitanie) or social and political education of the students, the other of technical training and production processes (half the income of the school is derived from manufacturing contracts), together with an Administrative and Technical Secretary responsible for the administrative and support staff.

56. There are three kinds of teaching staff in an SPTU: teachers (uchitel) at two levels, metodist and starshy (senior teacher) who deal with the academic, theoretical, and general educational studies; instructors (vospitatel) who run the practical trade training in the workshops; and tutors who look after the welfare and organised extra-curricular activities of students, most of whom usually live in a hostel attached to the SPTU. Academic staff are grouped into subject "Commissions"headed by a Chairman, whilst instructors work directly under a Senior Instructor.

57./

57. Directors have a basic salary of around 250 roubles[1] per month together with additional payments for any teaching undertaken, and with bonuses for meeting targets (largely concerned with meeting agreed contracts with the base enterprise and with student attainments). Annual leave is for 8 weeks. Every five years Directors (as are most senior staff) are expected to attend the All-Union Upgrading Institute at Leningrad (or at one of its branches in the various Republics) for a refresher course in pedagogy and sociology. They are usually appointed from the post of Deputy in another SPTU after having completed the necessary courses.

58. Teachers receive, after 10 to 15 years experience, a basic salary of about 125 roubles per month. The base-line commitment for teaching is 900 hours over 10 months, but they may work over-time at the rate of 1.66 roubles per hour to a maximum of 1,800 hours over 10 months. The rate is higher for those with advanced qualifications. Extra bonuses can be earned for completing individual research work, for student success rate, and contributions to the effectiveness of the school, all of which are awarded by the management in consultation with the Trade Union. Instructors, who are usually highly qualified and skilled workers with pedagogical qualifications, receive a basic wage of about 125 roubles a month, also with additional payments for meeting production targets and for extra work in the social and extra-curricular activities (in sport, hobby clubs, and work with the Young Communist League). Tutors receive between 100 and 150 roubles a month with six-monthly bonuses of about 8% of the basic wage for extra contributions.

59. These bonuses are awarded according to varied lists of criteria which are linked directly to quality control measures within the institution. For example, during every winter vacation the Trade Union representatives and the management meet and visit each teacher's room to see what has been added to, improved upon (visual aids, displays, etc.) during the last six months. After discussion with the teacher the bonus is agreed or not as the case may be. Every month a teacher must produce a written report of what has been done, what audio-visual aids made, and what has been organised on their own initiative to improve the teaching process from the centralised source of materials.

60. To encourage such development, in addition to payment of bonuses, each teacher is expected to provide during the year a number of "open lessons" (otkrity urok) during which colleagues are invited to sit in and take part in critical discussion of what happened during that lesson. Such open lessons may also be part of an individual teacher's project on developing some aspect of the curriculum or its methodology. Every SPTU has a methodological theme assigned to it over a five year period and at the end of each academic year the staff meet to read and discuss reports which are then passed to the State Committee. Those methods, model lessons, assignments, aids, etc., which are thought to be of significant use are then disseminated throughout the system. Projects are also used in developing the concept of "socialist emulation", or competitions (olympiad) in which teachers compete at local, regional, republic, and Union levels for the best pieces of research. For a teacher, a significant part of the job is preparing for these "pedagogical readings" in which the results of research and development are presented to colleagues. In addition, the SPTU Director, Deputies, and heads of departments will also exercise control inspection (proverka) by sitting in classes regularly/

---

[1] Officially the rouble equals about £1. However, comparisons are difficult; but the total cost, for example, per month of an apartment and all utilities would be about 25 roubles, whilst a good suit of clothes, if obtainable, might be as much as 200 roubles.

regularly for two, three, or four classes each week. Visits are made to SPTUs by Board Inspectors from the Regional Committee for Vocational Technical Training and the bi-annual "all-round" inspection will be undertaken by a group of 8 inspectors who will spend a week at the school, prepare and discuss a report with the staff, which is then published. Every five years teachers and instructors are required to attend refresher courses updating their professional and technical knowledge and skills. Instructors are required to return to the base enterprise, full-time for two months, or part-time for 4 months (half of which is spent at the SPTU, half at the enterprise).

61. Since learning is considered best to occur in the pupil's interaction with an adult, a typical teaching day begins at 07.30 and continues to 15.00 for six days a week, consisting of instruction in a classroom or workshop. Classrooms express the nature of the educational process. Posters, notices, diagrams, pictures, and student work are neatly arranged on the walls, and extensive use is made of visual aids. The teacher's desk will face formally arranged rows of desks and from which it is possible to control electrically rotating racks of display posters, slide and film projectors (frequently rear projection), various types of writing surfaces, opening and closing curtains, and the indicator system used to monitor pupils' responses to multiple choice questions. There is a wide range of carefully made models (static, working, full-scale, etc.) to illustrate the working of the relevant machinery, tools, processes, together with simulators for learning to drive vehicles (many of these are made by the students in this or a neighbouring SPTU while many of the more detailed and complex aids are centrally provided).

62. What is taught is decided centrally by the State Committee and is laid down in the syllabus (uchebny plan) which details the subjects to be taught for the particular trade, and number of hours to be allocated to each subject while the uchebny plan, curriculum, lists step by step the contents of each subject. How the curriculum is taught is also limited since there are so many model lessons available; but in theory, the teacher can develop an individual approach. Such approaches have to be justified and proved as successful as represented by student assessments and gradings on a 5-point scale achieved continuously throughout a course, before they may become formally accepted as a valid teaching method. (An average of 4.2 would be considered to be successful).

63. Most students are aged between 15 and 18 and live in hostel accommodation on the "campus". There are no fees to pay, and school uniforms, textbooks, accommodation, and three meals a day are provided free. Cut-price public transport is available, often as much as 30% to 50% on long distance trains and planes, and there are allocations of free tickets to the theatre, ballet, concerts, and other cultural activities. Medical check-ups are frequent and free and there are special rates for holidays in resorts at camps and sanitoria. They earn roughly 30% of the going rate for the trade, which they retain, and which increases as their competence increases. They have two weeks holiday in the winter and six in the summer, the so-called fifth term in which they will generally participate in unpaid work (subbotnik) on construction projects like the recently completed Baikal to Amur railway, or paid work in various areas. These projects are often organised by Komsomol.

64./

64. The working day is long. After-class activities are encouraged in addition to the weekly two-hours compulsory physical fitness class, team games and other sporting activities are emphasised.

65. An important aspect of student life is self-management. At one level there are duties (obshchestvennoe poruchenie) related to manning reception, serving meals, cleaning and tidying, maintenance, organised by student self-governing councils. At a more important level, self-government has a legal status so students have the right, through their social organisations, to discuss improving the academic process, ideological work, student progress, discipline, and life in the college. Students participate in scientific and educational "commissions" with staff, Komsomol, and Trade Unions to discuss and submit to the administration and the SPTU Academic Council proposals to improve academic and leisure activities. They also have the right to discuss allocating or withholding allowances to students who are not meeting standards, and even to replacing staff who may not measure up to the high levels of competence required. This involvement is present at all levels of education since it is designed to encourage initiative, to foster a spirit of independence, a sense of responsibility, and to develop organisation skills.

66. The norm is for 95% of students to belong to Komsomol the major socialising agency entrusted with many duties - moral, political, social, vocational, cultural, recreational and academic. It organises and leads pupils' collectives, clubs and societies, and is powerful enough to serve as an instrument for selection and promotion of suitable talented young people; it can affect social mobility. Komosomol members each have a special report book which includes academic achievement in all disciplines from Grade 8 to 10, competitions in academic subjects (predmetnye olimpiady), in elective subjects (fakultativy), public lectures, labour commitments, achievements in sport and self-evaluation, the Komsomol task (komsomolskoe poruchenie) and so on. Komsomol ensures that every student has some useful activity which fills out-of-classroom time.

67. Students are also represented on committees for the CPSU and Trade Unions, the secretaries of those committees being paid for their work.

68. SPTU No. 58, in the Kuybishev District (one of 200 in Moscow) is a typical technical school. Seven hundred students (all girls but for two boys) aged between 15 and 18 are being trained in 58 various trades suitable to the production line producing rubber footwear in the base enterprise of Krasni Bogatyd. Set in rapidly growing area of new apartment blocks, and one of 4 SPTUs in the area, it is a modern, functional building of three blocks - one for theoretical studies, another containing 21 workshops, and the third a hostel with accommodation (most of the pupils' homes are outside Moscow) and community services. Most students entered the SPTU from Grade 8 of the 10 grade polnaya srednyaya shkola and are pursuing a three-year course of general education and specialised skills training. (50 entered from Grade 10 and follow a special one-year course comprising one-third general education, and two-thirds practical training.)

69. In their first year these students will spend half their time on general studies comprising history, physics, chemistry, a foreign language (usually English or German), biology, maths, aesthetics, PE, and'foundation knowledge of the USSR', (see Figure 5), its economy, labour organisation, and Marxist-Leninist theory. Vocational training depends on the trade qualification sought/

sought, but the broad basis consists of the special technologies of production of goods from rubber, safety, technical drawing, and familiarisation with equipment and processes used in the factory. In the second year the emphasis shifts more to vocational training and practical training in the workshops which simulate the production line, whilst in the third year more and more time (up to 3 days a week) is spent working in the factory under supervision on production of goods which are sold. In June of the last year students sit the state examination for their Diploma in Vocational Training after which, if successful, they are awarded the badge of their trade. If they fail, they take on unskilled work and may return later to complete their studies. They have to pass in both general education and trade training. All students are guaranteed a job in the factory. 30-40 take advantage of the special preferences given to SPTU students to go directly into VUZ.

FIGURE 5

Areas of study and subjects	Total number of hours during training period
Vocational area of study	2,564
including:	
industrial training	2,110
special processes	231
tolerance and technical measurements, mechanical engineering: materials and technology, technical drawing, fundamentals of economics	223
General educational area of study,	2,386
including:	
Russian language and literature	217
mathematics	322
history	239
physics and astronomy	312
chemistry	191
foreign language	114
social science, geography, biology	189
Aesthetic education, physical culture etc.	802
Total:	4,950

70. Part of the general education aimed at the "all round development of personality" will include activities in various social and hobbies clubs, in the Young Communist League (98% are members), often working towards one of the many national competitions (olympiad) for apprentices (the State Exhibition of the Economic Achievements of the USSR in Moscow contains a pavilion displaying the winning work of apprentices in an amazing display of art, craft, and technical design). Uniforms (blue skirt and waistcoat with blue and white check shirt) are provided free and students may earn money from their work on the production lines. Students work duty rostas taking on such tasks as manning reception and greeting visitors, controlling the dining room or helping serve food. The atmosphere is friendly, orderly, and neat; colourful political displays cover most walls and it is in many ways a relief from the drab exterior of flats and muddy paths.

71/

71. The average student cost in an SPTU is 1,200 roubles, but here it is 2,400 (32,000 roubles are spent on food each month, and 35,000 roubles on student grants). One hundred people work in varying capacities in SPTU No. 58 from maintenance and kitchen staff, to the Director (one of the 24 women Directors in Moscow), two Deputies, 17 teachers, and 23 instructors, giving an SSR of 17:1. They are proud of their achievements, their efficiency and effectiveness and of the care they take of the young generation. Whilst a westerner would find it formal, even old-fashioned, there is no doubt that the training is thorough, well planned, and generously funded.

SPTU No. 115, Leningrad

72. This vocational school was established in 1974 as the first and only in the USSR to train apprentices for underground railway systems. (There are now four - in Baku, Tashkent, Minsk, and Kharkov, and one is planned for Moscow.) 800 students are trained in seven trades for Leningrad's metro - as turners, fitters, escalator maintenance, mechanical and electrical engineers, and as sanitary workers. There are currently only 6 girls under training (for platform work) since under Soviet labour protection laws girls are not allowed to take on those sorts of trades. All the students are aged between 15½ and 18½ who have entered training at the end of Grade 8 and will take a Diploma in General Education together with a Diploma in their specialist trade. Jobs in the metro are allocated to graduates according to their final gradings. Of the 300 students who graduate each year about 30 will enter higher education directly since they meet the necessary "profile" for privileged entry to VUZs, or to the Railway Institute where they graduate as engineers (Diplom Ingenieur) in railway construction, tunnelling, and general structural engineering.

73. All practical trade training is undertaken in conjunction with the Leningrad Metro which is the School's base enterprise, thus providing for the school all equipment necessary for training together with instructors. During the first two years of the course the equal balance between theory and practical work is maintained gradually in the final year spending more time in on-the-job training. The last four months of the course is spent working on the Metro under supervision by instructors from the PTU and from the Metro who work together supervising groups of 15 trainees. While working on practicals students are paid half of the going rate for the job, half of which they retain, and half of which goes to the school which helps to provide for extra materials and leisure activities. Students are entitled to use the leisure facilities and privileges available to all workers on the Metro.

74. The syllabus is automatically reviewed every 5 years, but more frequently as new equipment comes into use. When changes are necessary the Director will write to the Department Board which, if it has competent members, will redraft the syllabus. If the Board is not able to undertake the review then the school will take on the task and submit its changes to the Board for approval.

75. There are 43 instructors on the staff and 25 teachers. There was no budget figure available but the income received from Leningrad city authorities was said to be 200,000 roubles a year.

76. The most striking feature of PTU 115 was the availability of equipment currently used in the Metro as demonstration and practical aids. The workshops repeated what a trainee would find at his eventual work station.

PTU/

PTU No. 109 Leningrad

77. This PTU was attached to a women and childrens' clothing manufacturer, the Volshvika amalgamation, with 800 students, the majority of whom entered at the end of Grade 8, but some 30 also after completion of Grade 10. The former take a three-year course, again half general education and half trade training, whilst the latter take a one year course of trade training. The majority of students are girls: boys' trades were limited to cloth cutting and machine maintenance. The school was putting annually some 300 to 400 trained workers into the enterprise. About 25% of graduates entered higher education each year direct from the PTU.

78. 183 people work in the PTU of whom there are 23 teachers, 50 instructors (divided into two divisions), and 9 tutors responsible for hostel accommodation, recreation, cultural activities and counselling. Skills taught are those required for the enterprise; cutting cloth measuring, tailoring, various kinds of sewing, repairs, and design of clothes. All the goods made are sold to the enterprise, 50% of the income going to the students, and 30% to the school. Contracts are drawn up with individual businesses (attelier) and production to meet these contracts finances to a large extent the institution and regulates the tempo and quality of training. Classes usually number about 30 with two instructors supervising their practical work. (This number will drop to about 15 where work, such as cutting, is dangerous or complex.) Each class also has a teacher attached to it in vospitanie (but all staff attend courses to improve their political knowledge).

79. Whilst the PTU shares the common core curriculum of all vocational training establishments adaptations are made to meet the needs of the trades. Theoretical subjects therefore include, for example, chemistry in terms of synthetic fibres used in clothing manufacture, design, the history of costume, and the development of tailoring skills at complex levels. Each year the PTU has a "theme" which trade training must follow. 1984's theme was "Petrograd-Leningrad", the city's history expressed in terms of costume. Each year the students meet to discuss the theme and decide how their work is going to reflect it and are largely responsible for designing the clothes, making them and at the end of the year setting up a public performance in which they model the clothes. PTU 109 appears to be a successful school in the student olympiad; one student recently winning the national "Golden Hands" award.

80. The school contained a special assembly hall, gymnasium, hostel, dining room, a large library and work area, workshops equipped with the machinery used in the amalgamation's workshops, (including a miniature production line), a medical room, classrooms for academic subjects, together with offices, staff rooms, and catering facilities. There was also a small but impressive museum of the Great Patriotic War assembled by students, and a special display room of students' work which was also used as a meeting place for pre-8th Grade children to visit as part of their vocational guidance programme and for parents' days.

PTU No. 15, Georgia

81. PTU No. 15 is a vocational school attached to an amalgamation of collective (kolkhoz) and state farms in the area for training in agricultural trades, mostly for specialist fitters, agricultural machine drivers, and an unusual course leading to work in the wine industry. There are 649 students (29 of whom are girls) divided into 24 groups, or classes, 15 of which are concerned/

concerned with agricultural engineering. The buildings, some dating back to the 1940s contain a hostel (for 100 students), dining room, 42 workshops and classrooms, a sports hall, rooms for extra-curricular activities, and playing fields. The PTU also holds 62 hectares of land for practical work. A wide range of machinery and equipment used in the farms is held including the most powerful tractor in the USSR, the K700. The PTU is developing a further 4 hectares for orchards and a vineyard, a pig farm to provide meat and apple and grape juice processing in order, like a collective farm, to be as self-supporting as possible. It is anticipated that student numbers will rise to 900 during the next five years. The failure rate was said to be about 1.8% (these students go to work on a farm for six months and if a good reference is provided they will be taken back on the course; if not they are only qualified for the lowest levels of agricultural work). Lsst year 4 students went on to higher education in a techknikummy, 6 to the regional Agricultural Institute and two girls entered medical school.

82. Practical work is undertaken on the school land and on farms though the bulk of work appears to be in classrooms and workshops. For example, the content of the first year training for a fitter consists of:-

Agronomy (plants, soil, seeds, ecology, cultivation, irrigation etc.	70 hours
Organisation of agricultural mechanisation	800
Tractors/cars	533
Agricultural machinery	431
Maintenance	361
Safety regulations	69
Traffic rules	80
Technical drawing	57
Training on equipment not in programme	70
General Studies	1,480
TOTAL	3,951

VI ANALYSIS AND EVALUATION

83. The development of an educational system integrated with the planned needs of an entirely State-owned economy, and which is driven by a pervasive centrally controlled ideological thrust, forces an outside observer to make two distinct assessments. One concerns the success and efficiency of the system in meeting defined economic needs, the other its effectiveness as a politicisation process. Unfortunately, the one is only totally explicable in terms of the other. However, there are five generalised observations which can be made:-

(a) Vocational training is a means of controlling the labour pool. Unemployment is unknown in the USSR. This is partly because the economy cannot meet all the demands made of it; there is, as yet, no surplus capacity. Secondly, there are not enough skilled workers available to meet work-force needs. The latter reason may be partly offset by the virtual compulsory education of all young people up to the age of 19 (the alternative of unskilled work and part-time study for the early school leaver is unattractive) which is followed by military service. The majority of the age range in which there is massive unemployment in/

in the west is thus effectively taken out of the labour pool. Vocational training, together with higher education, effectively controls the annual input of young people into the labour pool according to the capacity of the economy to accept them.

(b) Vocational training does not provide the same opportunities as higher education for upward social mobility. Despite the image of a classless society, upward social mobility into the privileged intelligentsia and apparatchiks derives primarily from the VUZs and the technikummy; vocational training in the SPTUs runs a poor third choice. The lower abilities and lack of demonstrated attainment of SPTU entrants are reflected in the average figure of 6% who go on to higher education, despite the privileged entry accorded to them by VUZ and SSUZ. For 60 years the USSR has tried either to improve the status and image of vocational training (it is, after all, fundamental to concepts of the value of labour) or to direct more young people into it through quota systems and vocational guidance profpropaganda. The reforms of 1984 simply reinforce guidelines first laid down in the 1940s.

(c) Vocational training is a sub-system of industry, commerce, and agriculture. One major achievement of the reforms is the legally enforced system of enterprise patronage, sheftsvo, of vocational schools, thus ensuring a relevant and cost effective training system which is not deprived of funds, materials, and staff as the economy fluctuates. In the socialist economy, however, such financing is simply shifting funds on paper from one part to another so that the true cost-effectiveness for example, per student (said to be between 700 and 1,000 roubles) is difficult to ascertain. It is claimed that an increase of 3.2 in resourcing creates an improvement of 4.2 in the economy. Nevertheless, the amount of money spent on training represents a significant proportion of national income, while much of the system is also self-financing.

(d) Vocational training has not as yet had to handle high technology. High technology in the USSR has not percolated down from its manifest use by military and space programmes to either the general economy nor to everyday life. So far central authorities are "exploring" its use and impact on both the economy and society. However, future long-term planning is undertaken by the process known as "social prognostics" (sotsialnoe prognozirovanie) which is concerned primarily with goal-setting. There was no evidence of basic computer literacy in the SPTUs nor of particularly complex machinery used in factories. The long-running rigidity of training, organised in a way to reflect the arbitrary division of the economy into Branches, may militate against the flexible re-training necessary with a planned lessening of reliance on labour-intensive processes.

(e) The resources put into vocational training are not reflected in quality outputs of the economy. Despite the care, the intensive training, and insistence on high standards of achievement/

achievement in even lower-level skills, there is a large gap between training and its effects as reflected in the real world. Buildings are poorly constructed, services in shops and hotels minimal, and country life seems relatively untouched by the modern world of the city although 25% of the working population is involved with agriculture. Consumer goods are scarce and shoddy, and life in the bleak landscapes of high-rise apartments can only be described as dreary.

84. So wherein lies the effectiveness of the system? Is it simply in the achievement of centrally planned political and economic (non consumer based) goals? What does the system have to recommend it?

85. The "unacceptable face of socialism" is the cost of the politicisation processes. The pressure to conform to "socialist norms" laid down by the CPSU with its membership of 18 million (about 6% of the population) envelops young people in powerful propaganda. Undoubtedly, vocational training could be more efficient if less time were spent on political education; but pressure, competititon, and conformity seems to be part of the communist society. Deviation from the norms brings retribution both subtle and crude. The result is an observable joylessness and lack of spontaneity.

86. Nevertheless, the system has many aspects to recommend it, particularly to the UK with its ad hoc approach to both training and education:-

(a) The legal basis for requiring trade qualifications for many trades ensures a standard which goes with a licence to practice;

(b) Vocational training is relevant to the economy it serves because of the integration of schools with economic enterprises within its locality;

(c) General education is seen to be as important as skills training since it provides the basic flexibility of workers in coping with future change;

(d) New curricular and teaching methods are never introduced without rigorous research to establish their validity;

(e) The dual system of uchitel and vospitatel in the schools maintains up-to-date knowledge and skills within the trades;

(f) The in-service training and staff development processes are readily available, systematic, rigorous, and compulsory;

(g) The quality of performance of teaching staff is regularly monitored and where necessary remedial action is taken;

(h) The centrally controlled syllabii and a single awarding body maintain a consistency of provision and standard of required achievement ;

(i) Students are progressively introduced into the world of work, its obligations, duties, and realities and develop the social and mental skills to enable them to cope with the transition from school to work;

(j)/

(j) Students see the relevance of their training to their future work and as providing access to further training and higher education if they so wish;

(k) Using educational technology in the classroom is the norm rather than the exception and the quality of materials provided is extremely high;

(l) Student assessment is continuous, rigorous, and reinforces learning.

87. Probably the most significant factor is the existence at central government level of the Committee for vocational training which has the same influence as those Ministries concerned with public education and is backed by laws which provide authority and power to construct a unified system integrated with national policy making.

88. Conclusion. It is dangerous to make too many definitive statements concerning a system after a short visit. However, the data and impressions recorded in this report are as accurate as they were given and as true as they were gained. There is no doubt much the UK could learn from the system; this includes both central organisation and policy making with every-day techniques of managing the training system. To do this, however, means putting aside pre-conceived notions,political bias, and subjective responses to the many levers for conformity. The basic assumptions of the system outlined in the Introduction do not necessarily invalidate the processes of that system.

* * * * *

BIBLIOGRAPHY

Brine, J., Perrie, M., and Sutton, A. (eds): Home, School, and Leisure in the Soviet Union, George Allen & Unwin, 1980.

Mathews, M.: Education in the Soviet Union, George Allen & Unwin, 1982.

Vocational Training in the USSR, Novosti Press Agency, Moscow, 1982.

Weaver, K.: Russia's Future, Preager Special Studies, New York, 1981.

Zajda, J.: Education in the USSR, Pergammon Press, 1980.

* * * * *

APPENDIX 1

GENERAL EDUCATION AND VOCATIONAL TRAINING REFORMS

Pravda reported on the 13th April, 1984, the Resolution passed by the Supreme Soviet of the USSR the day before, accepting the outline guidelines for the reform of general education and vocational training to take place within the Soviet Union during the 5-year Plan which commences in 1986. The 26th CPSU Congress in 1983 had charged Deputy Aliyev, First Vice Chairman of the Council of Ministers of the USSR to draw up such guidelines for developing further Lenin's ideas on a unified labour and polytechnical school (politekhnicheskoe obrazovanie /POs/) and its role in moulding the "new man", of critical importance to the economic, socio-political, and "spiritual"progress of Soviet society. The seven-point Resolution outlines a broad package of measures designed to raise the work of the Soviet school to a qualitatively new level.

The most significant measures are those concerned with raising the quality of education, of communist upbringing (vospitanie), labour training and participation in socially useful work (trudovoe vospitanie), occupational guidance of children and teenagers, and, by starting school a year earlier, offering earlier access to knowledge and opportunities of cultivating habits of socially useful work. Secondly, there are measures concerned with the improvement of the management of public education by closer inter-ministry co-operation, strengthening the teaching and economic basis of secondary and vocational schools, improving the teaching and educational processes, and perfecting ideological moral and labour education to meet the needs of the Soviet economy and technology as they are presently developing. The third set of measures concentrate on increasing the responsibilities of public, local education bodies in implementing improved labour training, and the closer integration of education with other social activities which envelop children within the educcational system.

Underlying these measures are several objectives which recognise existing weaknesses in the system and which seek to unite even more closely the education, training and politicisation of Soviet children. Whilst the current training requirements are principally for engineers, and technicians, workers are required with advanced education based on deeper understandings of scientific knowledge and the new technologies, with greater physical and intellectual development, and a more creative attitude towards work. Existing drawbacks recognised in the schools include their structure, quality, methods of learning which are too passive, teaching and assessment which are too formalistic, and insufficient study in depth of the study of science. Textbooks, visual aids, the centrally provided curriculum (uchebny plan) and syllabus (uchebnya program), need to be revised, particularly to avoid over-complicated material and excessive workloads on pupils. The weak relationships between schools and local enterprises, poor vocational guidance, and the comparative lack of highly skilled workers who wish to join the vocational training system as instructors (vospitatel) are all to be improved. Reforms will increase the responsibility of students for their own learning, their discipline and self management, and increase the status of teachers and instructors, their working conditions, and the money available to schools.

The principal measures announced so far concern the conditions of service of staff and the structure of the educational system. In September, 1984, all/

all teachers (uchitel) and instructors will receive a 33% increase in salaries. September 1st will become a National Holiday, the "Day of Knowledge", (in addition to "Teachers' Day" in October) and teachers and other workers in public education will become eligible for the award of the Order of Labour Glory (a few are Exemplary Educators of the USSR and Heroes of the Socialist Labour). (The salary increases are aimed at attracting highly qualified workers into vocational training.)

As from September, 1986, all schools in the USSR will take children into the elementary schools (nachalnaya shkola) at the age of 6 instead of 7, and compulsory education will continue for 11 years to the age of 17. Primary schools will then consist of Grades 1 to 4, and the incomplete secondary school (desyatiletnyaya shkola) where they exist will comprise Grades 5 to 8. Complete secondary schools (polnoe srednee obrazovanie) (PSOs) will includes Grades 10 and 11. Children graduating from PSOs usually go on to higher education institutes (vyshee uchebnoe zavedenie) (VUZs) but they will have opportunities at various stages to enter vocational training. Students ending at Grade 8 in POs will continue in either special secondary vocational schools (srednie spetsialnoya uchebnoe zavedeneya) (SSUZs), and secondary general schools (nepolnaya srednie shkola) (NSSs), or secondary vocational schools (srednie professionalno teknicheskoe uchilisrcha (SPTUs) which can also be entered at the end of Grade 10. The SPTU will be the sole type of general vocational school with branches in different trades and offering courses of various lengths, depending upon the qualifications students already possess. (The main differences between the existing PTUs and SPTUs is that the latter will contain a compulsory element of general education not necessarily available in the old PTUs.) Ninth Graders will spend 3 years in SPTUs, whereas 11th Grade leavers will spend just one year which will qualify them to practise their chosen trade. SSUZs will offer one-year vocational training courses while NSSs will offer some vocational training together with courses designed to complete secondary education to the 11th Grade. It is expected that the number of children continuing training after Grade 9 will depend primarily on the needs of the economy, but the numbers each year going to SPTUs will rise from one million to two million within the next four years. It is anticipated that move will raise the flagging image of the old PTUs and of technical training in general.

It is also the aim of these reforms that every child will have an opportunity to master a skill, and to that end polytechnic schools (POs) (which comprise Grade 1 to 11) will introduce a programme of closely integrated theory and its application in work, which will include increasing amounts of time (practicums) spent working on special production lines (uchebno proizvodstvennye kombinaty) within local enterprises on the lines of the model already operating in the German Democratic Republic. Labour training (trudovoe vospitanie) will systematically introduce children from Grade 1 to work. Grades 1 to 4 will concentrate on basic hand craft skills with a variety of materials, and will produce, for example, toys, visual aids for use in the school, simple school maintenance, and basic horticulture. Grades 5 to 9 will study and practice working with wood and metal, the electric technologies, technical drawing, and the main branches of the public economy in the USSR. Grade 8 will emphasise working in units and teams to produce goods in their school workshops, their local enterprise study workshops centre (which by law will have to be provided), or in the local SPTU. Grades 10 and 11 will also have experience in these centres for a period each week and, if successful, may actually gain a trade qualification while working towards the attestat examinations/

examinations (leading to higher education). All schools will be required by law to work with a patron "base enterprise" (shefy) to develop labour training and local Soviets will decide on the needs for skills in the area and hence what each school will offer. Profits from goods produced will be reinvested in the schools. Concurrently with labour training is to be instituted systematic vocational guidance, for which the State Committee for Labour and Social Affairs is to be responsible for organising in schools and in guidance centres to be established across the Union.

Two further educational processes will be emphasised. First, increasing throughout the Union the compulsory learning of the Russian language, and secondly, the political upbringing of children in schools will now more closely integrate with social activities already being organised by the Young Pioneers, the Octobrists, and the Young Communist League (Komsomol). Potentially of greater impact will be the effective cutting of school holidays in the so-called fifth term during the summer in which most children will be required to devote half that time engaged in socially useful unpaid work (the subbotnik),(in construction, engineering, agricultrual projects etc.) on a larger scale than those already organised voluntarily by Komsomol. As the Resolution states the reforms are aimed at, "raising the quality of education and communist upbringing, fundamentally improving the labour training and occupational guidance of pupils, and instilling in youth the lofty moral qualities, love of the Motherland, and readiness to defend it". (Supplement to Moscow News, No. 16, (3108) Sunday, April 22nd, 1984.)

* * * * *